

Database Design & Development

Note: This document addresses Moodle™ version 1.8. Other versions may require modifications to some instructions mentioned herein.

The database module can be used in a variety of ways to support student learning. A database can be created by and for teacher use. (e.g. reference to standards addressed in a course or lesson); created by a teacher for student use (e.g. reference materials for content in a course such as a Periodic Table of Elements “Expanded”); or with a template created by teachers for students to research and fill in the blanks (e.g. Facts about our States).

Choosing Preferences for a Database Activity:

1. Turn editing on in your course.
2. Choose “Database” from the activity dropdown menu in the topic or course section of your choice. A preferences page will appear.
3. **Name:** Enter what you want to see as the link from your course page to your database, e.g. “States database.”
4. **Introduction:** The text entered here will be displayed at the top of the page that appears when users click on your database link. If your database is one to which you expect students to add content, you could type directions for the activity in this box.
5. **Available from:**, Available to: -- These are the dates the database is available for interaction, e.g. adding content in the case of a student input activity. Leave unchecked to have this as an ongoing project.
6. **Viewable from:**, Viewable to: -- These choices are for use if you wish to set up a database activity that will have a certain time limit for adding content, but a longer window of opportunity to have users be able to search and see what is in the database.
7. **Required entries:** You can set a number (none to 50) for the number of entries users are required to submit in this activity. Each user that has not yet submitted the required number will see a reminder message each time he/she logs in to the course.
8. **Entries required before viewing:** If you have an entry number requirement, you can also establish a number that must be entered before students can view the contents of the database. (For example: If the database activity is to be comprised of short bios of famous mathematicians, you may require each student to submit 3 entries and restrict them from seeing other students’ entries until they have submitted 2 or their three submitted entries.)
9. **Maximum entries:** Again, the choice is no maximum to 50 max. This setting helps you prevent the “overachievers” from filling up the database. (For example, you wish your class to submit factoids about the 50 states of the United States. In a class of 25 students, you may want to limit each student to 2 entries, so as to provide opportunity for engagement for the other 24 students.)
10. **Comments:** You can allow users to make comments about any database entry by turning this to on.
11. **Require approval?:** You can choose “Yes” so that teachers must approve entries submitted by students before they are viewable by all. (This is a way to moderate content that has potential for being offensive or inappropriate.)
12. **RSS articles:** The database can, if you select a number here, include RSS feed articles. (Note that RSS feed must be “allowed” by your Moodle administrator settings before this option will work.)
13. **Allow posts to be rated?:** Grade— You can use the “Separate and Connected Ways of Knowing” scale or choose a number grade for use in scoring the entries.
14. **Group mode:** No groups — Everyone in the course is part of one big community. Separate groups — Each group can only see their own group, others are invisible. Visible groups— Each

group works in their own group, but can also see other groups. Keep in mind that your choice here is impacted by the choice for groups that you elected for the course, overall. If you chose “Force group mode” in the course settings, group settings at the activity level will be ignored.

15. **Visible:** This setting, “show” or “hide” is the same as using the eyeball icon next to the activity link on your main course page.
16. Click the **[Save changes]** button at the bottom of the page to save your preferences for the database activity.

Designing a Database:

Once you have saved the preferences, a screen will appear indicating that now fields are defined for this database. You will also see five tabs appear that will help guide interaction with the database. If you have set the database activity for students to add entries, then they will see the first three tabs when they link to this activity. If you have allowed only teachers to add content, then students will see “View List” and “View Single” tabs only. The “Templates” tab and “Fields” tab are for your use in designing the look and interaction options for the database.

1. First, create the fields for your database. Use the dropdown menu next to “Create a new field” to choose the type of field best suited to the content you expect for this field. Choices include: Checkbox, Date, File (e.g. a book report in a database of book titles), Latitude/Longitude (Google Maps, Google Earth), Menu (dropdown choices), Menu (Multi-select), Number, Picture, Radio buttons, Text (short answer), Textarea (paragraph), URL. The range of options for these database fields opens this activity module to a wide range of uses.
2. Once you have your fields entered, click on the “Templates” tab to define how the information will appear to users browsing your database. It will display a default template for a single entry. The default templates utilize a table to organize the database information. (the dotted line boxes indicate an “invisible” border.) You can use this text editor to rearrange how the database entries will appear.
3. At the left side of the text editing window is a list of “Available tags” for the database entries. Included in the list will be the names of the fields you created as well as a list of placeholders for icons or buttons that can appear on each page. The icon placeholder `##Edit##`, for example, will actually appear as the pencil icon on the page when in view mode. One useful tag to add to your “single” template for many database activities is `##User##` so that the person who submitted the entry will be displayed.
4. You can determine the arrangement of information in your database in the single view mode and the list view mode or even add an additional template for another “view”. For example, you may want to only include some of the information on the database entry in the “list” view and include more fields on the “single” template. (To do this you would remove some fields from the list view template.
5. When you click on the Templates tab you will see many more tabs appear, including a tab for the RSS template (if you have opted to include RSS feed information), and a CSS template (for those who know how to use CSS commands that will affect how entries and text will appear in all templates. (Ignore this if you don’t know how to do this.)
6. Once you have your fields defined and your templates designed, you are ready to activate your database by clicking on **[Save template]**.



7. Click on the “Add entry” tab. This is, basically, what all who are allowed to add content to this database will see when they click “Add entry.” As a creator, you also will see a link to allow you to “Upload entries from a file.” (See “Uploading data to a database” section.) Otherwise, you may want to just add a few entries to your database activity, individually, so you can test how they appear in the list and single entry view modes.
8. Click on the “View list” tab. You should see multiple entries in your database (if you have entered several), each separated by a thin line, and, if you didn’t delete them, you will see icons that allow you to edit the entry, view the entry in the “single” mode and/or delete the entry. (The icons you see for the entries will vary, dependent upon the preferences you set for the activity and the items you included on each entry when you set up the template.
9. All users have some options when viewing the contents of the database. You can choose (for the list view) how many entries to include on a page. You can search for a keyword to help you find one or more database entries that include that term. You can sort by any field or by the date the entries were added, and you can sort in ascending or descending order.

Special Note: If you set up a database activity and add some entries, then change your mind about preferences for the activity, it will not delete the entries already in the database, but it will also not apply the new preferences to any pre-existing entries.

Uploading data to a database:

Sometimes you may want to provide a complete database as a reference tool for students, or you may want to simply enter some basic content into a database that can later be edited or added to by you or students. Choosing to “upload entries from a file” requires a little work ahead of time to ensure the content will be read and placed properly in the file.

Prepare the upload file:

1. Setup and note the exact names you set for fields in your Moodle database.
2. Use Excel (or other database/spreadsheet program that allows saving as a .CSV file) to prepare your database. (You can also use a text editor and separate fields with commas.
3. In the first row of your file, the field names should be typed exactly as they were entered in your Moodle database setup. For example: “state, capital, state_flower, state_bird, population,” etc.
4. Save the file as a comma separated variable file (.csv)

To upload your prepared file:

5. Click on your database link in your Moodle course.
6. Click on the “Add entry” tab.
7. Click on the “Upload entries from a file” link.
8. Click on the [Browse] button to find your file.
9. Click the [Upload file] button to add the file entries to your database.
10. If successful, it will import the entries then report how many were added. To view them, click on the “View list” tab.

You can upload information this way for just a few fields for database entries and then go back to add other content. This is a particularly important note for databases where you have set up a file field or picture field. These field entries must be added individually. For example, you may want to set up a database for information about the states and start with just a list of state names. Students would then need to go to each state listed and edit the entry to add pictures of the state bird, or to add a report file they created that explains other information about that state.